Amendments to the Claims:

This listing will replace all prior versions, and listings, of claims in the application.

Listing of the Claims.

1. (currently amended) An electrode for a secondary electrochemical cell comprising nanostructured material of a silicon-germanium alloy of formula $Si_{(1-z)}Ge_z$ or a alkali metal alloy ~~thereof~~ of said silicon-germanium alloy, wherein ~~0 < z ≤ 1~~ $0 < z < 1$.

2. (original) The electrode of claim 1, wherein the alkali metal alloy is a lithium alloy.

3. (original)The electrode of claim 1 wherein the nanostructured material comprises a nanoparticle.

4. (original)The electrode of claim 3, wherein the nanoparticle has a diameter of not greater than about 300 nm.

5. (original)The electrode of claim 4, wherein the nanoparticle has a diameter of not greater than about 100 nm.

6. (original)The electrode of claim 5, wherein the nanoparticle has a diameter of not greater than about 50 nm.

7. (original)The electrode of claim 1, wherein the nanostructured material is a nanofilm.

8. (original)The electrode of claim 7, wherein the nanofilm has a thickness of not greater than about 500 nm.

9. (original)The electrode of claim 8, wherein the nanofilm has a thickness of not greater than about 200 nm.

10. (original)The electrode of claim 9, wherein the nanofilm has a thickness of not greater than about 100 nm.

11. (original)The electrode of claim 2, wherein the lithium alloy of the nanostructured material has the formula $Li_xSi_{(1-z)}Ge_z$, wherein x is at least about 1.

12. (original)The electrode of claim 11, wherein the lithium alloy of the nanostructured material has the formula $Li_xSi_{(1-z)}Ge_z$, wherein x is at least about 2.5.

13. (original)The electrode of claim 1, wherein the nanostructured material has a cycle life that is stable over at least about 10 cycles.

14. (original)The electrode of claim 13, wherein the nanostructured material has a cycle life that is stable over at least about 20 cycles.

15. (original)The electrode of claim 1, wherein the nanostructured material exhibits a rate capability of at least about 1*C*.

16. (original)The electrode of claim 1, further comprising a binder and/or adhesive.

17. (original)The electrode of claim 1, further comprising a substrate.

18. (original)The electrode of claim 17, wherein the substrate is a current collector.

19. (withdrawn)A secondary electrochemical cell comprising an anode, a cathode, and an electrolyte, wherein the anode comprises nanostructured material of formula $Si_{(1-z)}Ge_z$ or a lithium alloy thereof, wherein $0 < z \leq 1$.

20. (withdrawn)The secondary electrochemical cell of claim 19, wherein the secondary electrochemical cell is an electrochemical supercapacitor.

21. (withdrawn)The secondary electrochemical cell of claim 19, wherein the secondary electrochemical cell is fabricated on an integrated device.

22. (withdrawn)A method of synthesizing a nanoparticle of formula $Si_{(1-z)}Ge_z$, wherein $0 < z \leq 1$, the method comprising evaporating elemental germanium into a gas, thereby forming a nanoparticle, wherein the gas comprises hydrogen.

23. (withdrawn)The method of claim 22, further comprising evaporating elemental silicon into a gas.

24. (withdrawn)The method of claim 22, wherein the nanoparticle is entrained in the gas, the method further comprising:

accelerating the gas and entrained nanoparticle; and

depositing the nanoparticle on a substrate.

25. (withdrawn)The method of claim 22, wherein the nanoparticle has a diameter of not greater than about 300 nm.

26. (withdrawn)A nanoparticle of formula $Si_{(1-z)}Ge_z$, wherein $0 < z \leq 1$, synthesized by a method comprising evaporating elemental germanium into a gas, thereby forming a nanoparticle, wherein the gas comprises hydrogen.

27. (withdrawn)The nanoparticle of claim 26, wherein the method further comprises evaporating elemental silicon into a gas.

28. (withdrawn)The nanoparticle of claim 26, wherein the nanoparticle is entrained in the gas, the method further comprising:

accelerating the gas and entrained nanoparticle; and

depositing the nanoparticle on a substrate.

29. (withdrawn)The nanoparticle of claim 26, wherein the nanoparticle has a diameter of not greater than about 300 nm.

30. (new) An electrode for a secondary electrochemical cell comprising a nanofilm of germanium or a germanium alkali metal alloy, wherein said nanofilm has a thickness not greater than about 500 nm.

31. (new) The electrode of claim 30, wherein the thickness of the nanofilm is not greater than about 200 nm.

32. (new) The electrode of claim 30, wherein the thickness of the nanofilm is not greater than about 100 nm.

33. (new) The electrode of claim 30, wherein the alkali metal alloy is a lithium alloy.

34. (new) The electrode of claim 30, wherein the electrode comprises a contiguous germanium nanofilm.

35. (new) The electrode of claim 30, wherein the electrode comprises a germanium alkali metal alloy produced by electrochemically alloying an alkali metal with a contiguous germanium nanofilm.

36. (new) The electrode of claim 30, wherein the electrode further comprises a conductive diluent.

37. (new) The electrode of claim 36, further comprising a current collector.

38. (new) The electrode of claim 36, wherein the electrode comprises alternating layers of germanium nanofilms and said conductive diluent.

39. (new) The electrode of claim 36, wherein the conductive diluent is capable of binding or alloying with an alkali metal.

40. (new) The electrode of claim 39, wherein the alkali metal is lithium.

41. (new) The electrode of claim 7, wherein the electrode comprises a contiguous silicon-germanium alloy nanofilm.

42. (new) The electrode of claim 7, wherein the electrode comprises a silicon-germanium-alkali metal alloy produced by electrochemically alloying an alkali metal with a contiguous silicon-germanium nanofilm.

43. (new). The electrode of claim 1, wherein the electrode further comprises a conductive diluent.

44. (new) The electrode of claim 43, wherein the conductive diluent is capable of binding or alloying with an alkali metal.

45. (new) The electrode of claim 44, wherein the alkali metal is lithium.

46. (new) An electrode for a secondary electrochemical cell comprising nanostructured material and a conductive diluent, wherein the nanostructured material comprises a germanium or germanium alkali metal alloy nanoparticle.

47. (new) The electrode of claim 46, further comprising a current collector.

48. (new) The electrode of claim 46, wherein the electrode comprises alternating layers of germanium nanoparticles and conductive diluent.

49. (new) The electrode of claim 46, wherein the conductive diluent is capable of binding or alloying with an alkali metal.

50. (new) The electrode of claim 49, wherein the alkali metal is lithium.